

4/13/18 "An eye for an eye only ends up making the whole world blind."-Gandhi

HW: "2017 A2 CC1 Transformations" #1 and 3

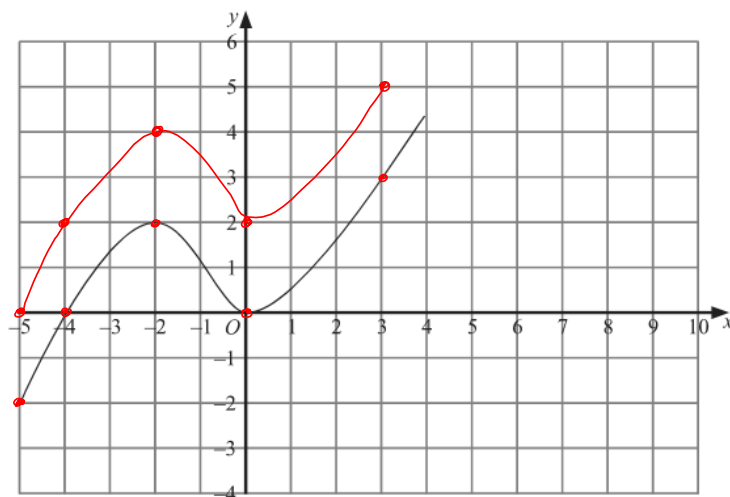
AIM: Transformations

Warm Up:

1. The graph of $y = f(x)$ is shown on the grids.

(a) On this grid, sketch the graph of $y = f(x) + 2$

← up 2 units

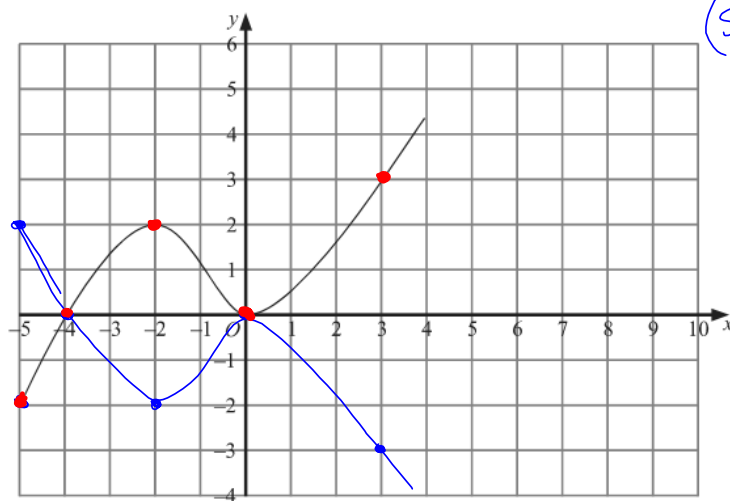


(2)

(b) On this grid, sketch the graph of $y = -f(x)$

← reflect over x-axis (switch sign on y-values)

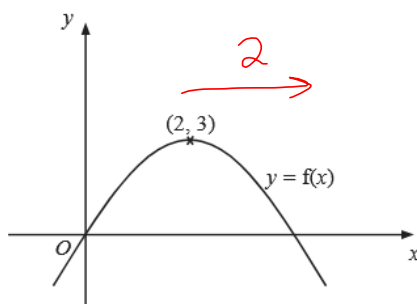
$f(x)$
 $(-5, -2)$
 $(-4, 0)$
 $(-2, 2)$
 $(0, 0)$
 $(3, 3)$



$-f(x)$
 $(-5, 2)$
 $(-4, 0)$
 $(-2, -2)$
 $(0, 0)$
 $(3, -3)$
 (2)

(4 marks)

2.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the maximum point of this curve are $(2, 3)$.

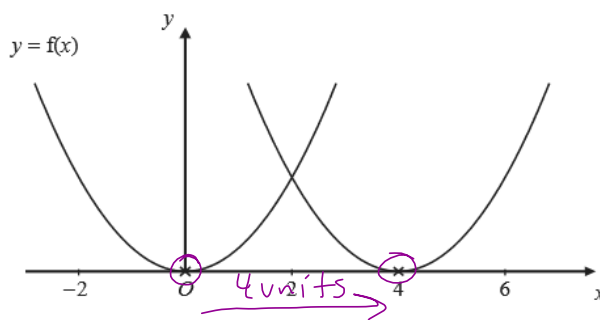
Write down the coordinates of the maximum point of the curve with equation

(a) $y = f(x - 2)$ (2, 3) \rightarrow 4 3
right 2 $\frac{+2}{4, 3}$ (.....,) (1)

(b) $y = 2f(x)$ (2, 3) 2 6
Vertical $\frac{\times 2}{2, 6}$ (.....,) (1)
Stretch

(2 marks)

3.



The curve with equation $y = f(x)$ is translated so that the point at $(0, 0)$ is mapped onto the point $(4, 0)$.

Find an equation of the translated curve.

$y = f(x - 4)$

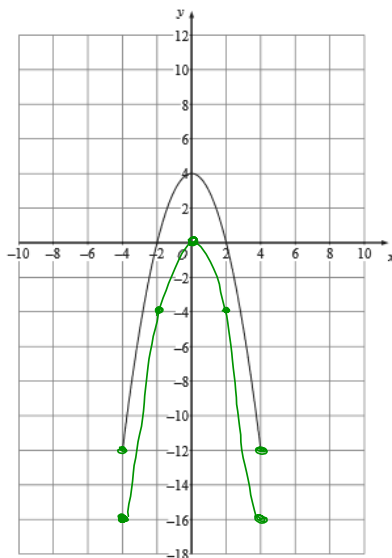
(2 marks)

4. The graph of $y = f(x)$ is shown on the grids.

(a) On this grid, sketch the graph of $y = f(x) - 4$

Shift down 4
(subtract 4 from y-values)

Grid goes by 2

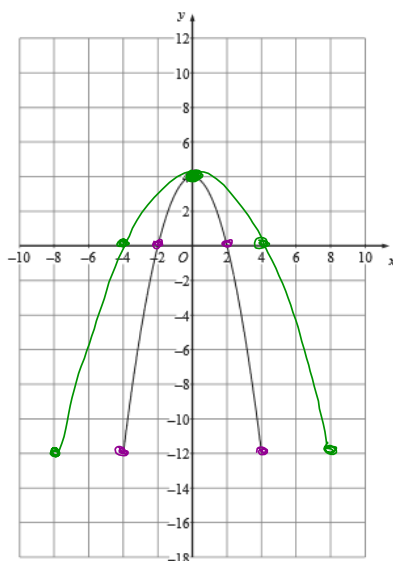


(2)

(b) On this grid, sketch the graph of $y = f(\frac{1}{2}x)$

Horizontal stretch by 2

$f(x)$
 $(-4, -12)$
 $(-2, 0)$
 $(0, 4)$
 $(2, 0)$
 $(4, -12)$

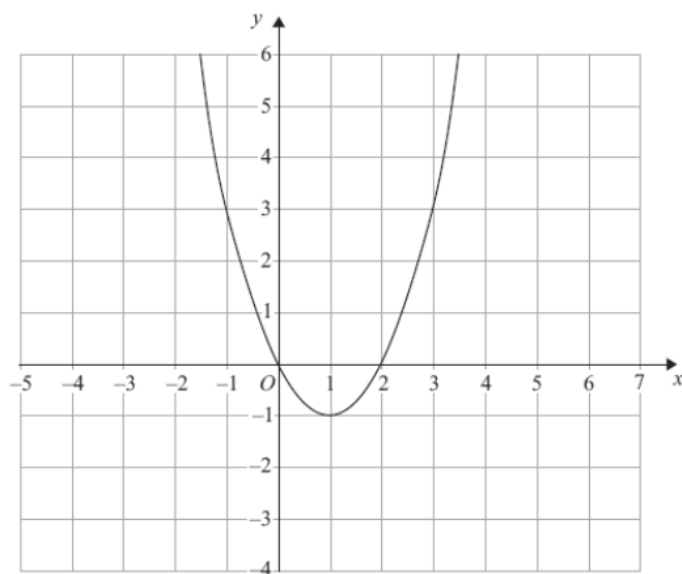


$f(\frac{1}{2}x)$
 $(-8, -12)$
 $(-4, 0)$
 $(0, 4)$
 $(4, 0)$
 $(8, -12)$

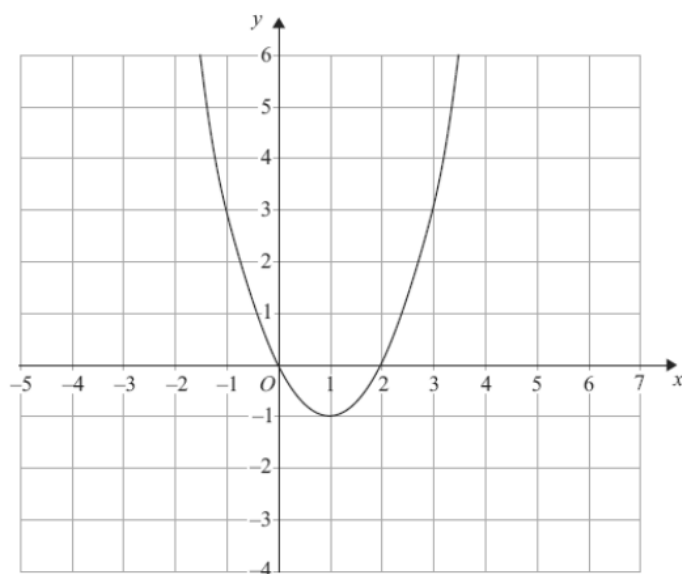
(2)

(4 marks)

5.

The graph of $y = f(x)$ is shown on each of the grids.(a) On this grid, sketch the graph of $y = f(x - 3)$ 

(2)

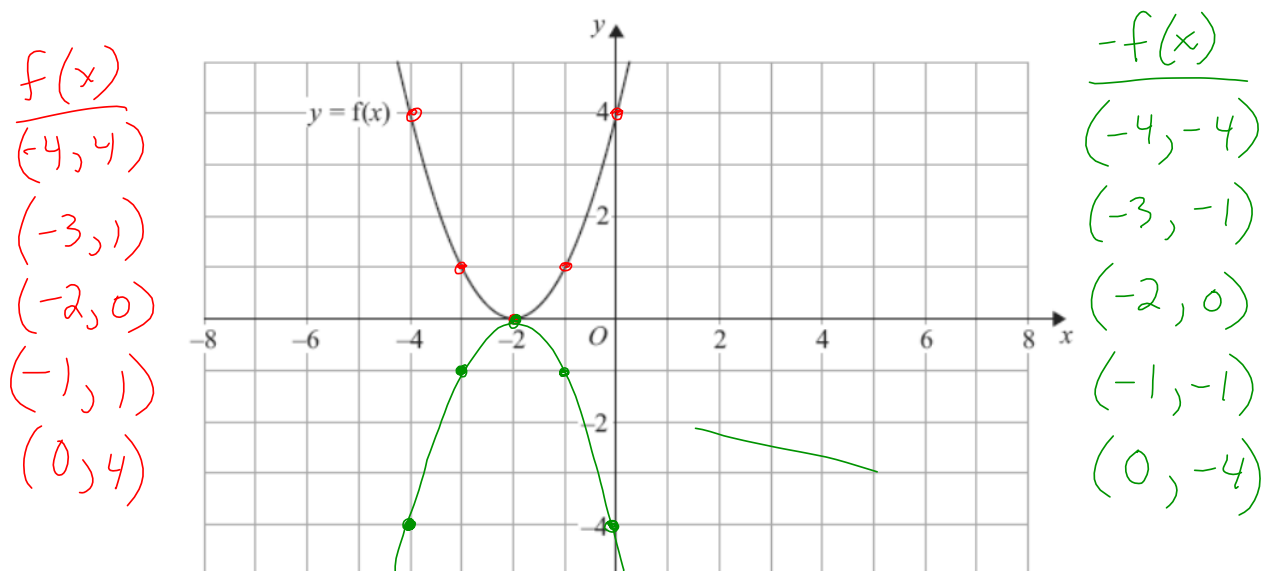
(b) On this grid, sketch the graph of $y = 2f(x)$ 

(2)

(4 marks)

6. $y = f(x)$

The graph of $y = f(x)$ is shown on the grid.

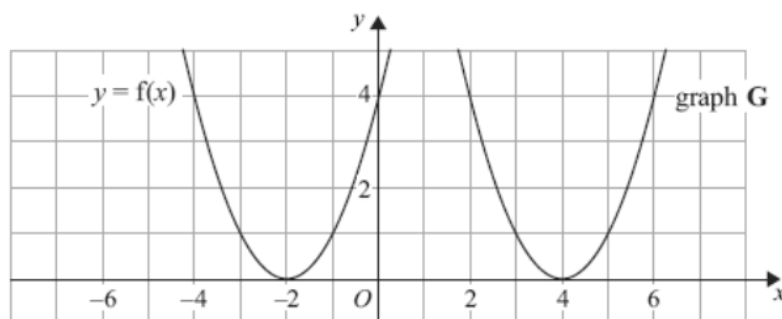


- (a) On the grid above, sketch the graph of $y = -f(x)$.

← reflection over x-axis

(2)

The graph of $y = f(x)$ is shown on the grid.



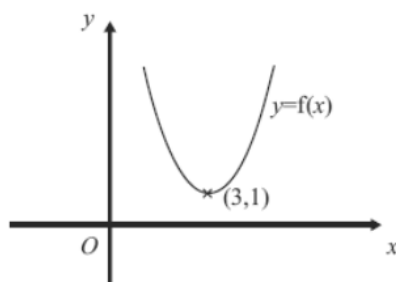
The graph **G** is a translation of the graph of $y = f(x)$.

- (b) Write down the equation of graph **G**.

(2)

(4 marks)

7.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the minimum point of this curve are $(3, 1)$.

Write down the coordinates of the minimum point of the curve with equation

(a) $y = f(x) + 3$

(1)

(.....,)

(b) $y = f(x - 2)$

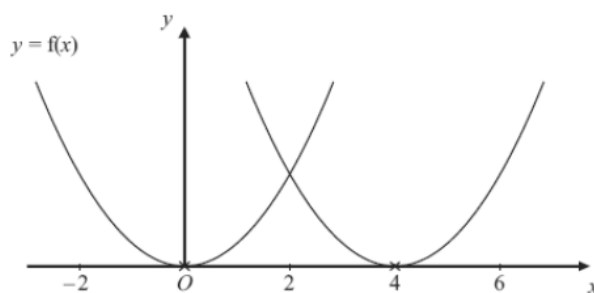
(1)

(.....,)

(c) $y = f\left(\frac{1}{2}x\right)$

(.....,)

8.

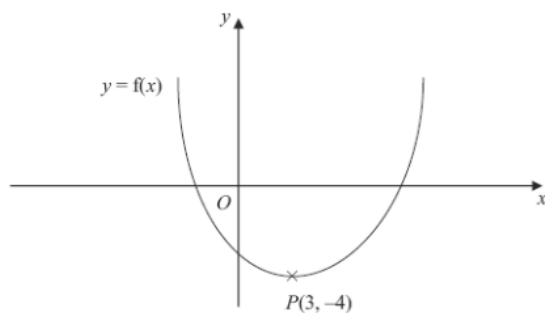


The curve with equation $y = f(x)$ is translated so that the point at $(0, 0)$ is mapped onto the point $(4, 0)$.

Find an equation of the translated curve.

.....

9. This is a sketch of the curve with the equation $y = f(x)$.
The only minimum point of the curve is at $P(3, -4)$.



- (a) Write down the coordinates of the minimum point of the curve with the equation $y = f(x - 2)$.

(..... ,)

- (b) Write down the coordinates of the minimum point of the curve with the equation $y = f(x + 5) + 6$

(..... ,)
